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# **Notice of Allowability**

Application No.

10/632,311

Examiner

Tung S. Lau

Applicant(s)

VIREDAS ET AL.

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/16/2007.
2. ☒ The allowed claim(s) is/are 1-5, 7-11, 13-18, 20-23, 25-27 and 29.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## **Attachment(s)**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Wendell J. Jones Reg. # 45,961 on January 22, 2008 (408-938-0980).

The application has been amended as follows:

In claim 1, line 6, after "different types of", add the following:

-- separate --

In claim 1, lines 7, after "being generated", add the following:

, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system

Cancel claim 6.

In claim 7, line 1, replace "claim 6" with 'claim 1"

In claim 8, line 6, after "different types of", add the following:

-- separate --



In claim 8, lines 8, after " generated ", add the following:

, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system

In claim 11, line 1, replace " claim 10" with "claim 8 "

Cancel claim 12.

In claim 13, line 1, replace "claim 12" with 'claim 8"

In claim 14, line 11, after " different types of ", add the following:

-- separate --

In claim 14, lines 13, after " generated ", add the following:

, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system

Cancel claim 19.

In claim 20, line 1, replace "claim 19" with 'claim 14"

In claim 21, line 8, after " different types of ", add the following:

-- separate --

In claim 21, lines 10, after " generated ", add the following:



, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system

Cancel claim 24.

In claim 26, line 6, after "different types of", add the following:

-- separate --

In claim 26, lines 8, after "generated", add the following:

, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system

Cancel claim 28.

In claim 29, line 1, replace "claim 28" with 'claim 26"

Amendments to the above claims were made to define over the applied prior art. The additional step of "the plurality of separate cooling systems" now positively claims the cooling system defined in the specification. This system is deemed to be non-obvious over the systems of the prior art.

***Allowable Subject Matter***



2. Claims 1-5, 7-11, 13-18, 20-23, 25-27 and 29 are allowed.

***Reasons for Allowance***

3. The following is an examiner's statement of reasons for allowance:

Independent claims 1, 8, 14, 21, and 26 contain allowable subject matter. None of the prior art of record shows or fairly suggests the claimed invention.

Regarding claim 1:

The primary reason for the allowance of claim 1 is the inclusion of the method steps for dynamically controlling cooling systems in a data center including activating each of a plurality of different types of separate cooling systems within the data center in an optimal fashion based on the heat being generated, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Claims 2, 3, 4, 5, and 7 are allowed due to their dependency on claim 1.

Regarding claim 8:

The primary reason for the allowance of claim 8 is the inclusion of a system for dynamically controlling cooling systems in a data center including means for



activating each of a plurality of different types of separate cooling systems coupled within the data center in an optimal fashion based on the amount of heat being generated, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Claims 9, 10, 11, and 13 are allowed due to their dependency on claim 8.

Regarding claim 14:

The primary reason for the allowance of claim 14 is the inclusion of a data center including activating each of a plurality of different types of separate cooling systems coupled to the global computer system in an optimal fashion based on the amount of heat being generated, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Claims 15, 16, 17, 18 and 20 are allowed due to their dependency on claim 14.



Regarding claim 21:

The primary reason for the allowance of claim 21 is the inclusion of a computer program product for dynamically controlling cooling systems in a global computer system, the computer program product including a computer usable medium having computer readable program means for causing a computer to perform the steps of activating each of a plurality of different types of separate cooling systems coupled to the global computer system in an optimal fashion based on the amount of heat being generated, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Claims 22, 23 and 25 are allowed due to their dependency on claim 21.

Regarding claim 26:

The primary reason for the allowance of claim 26 is the inclusion of a cooling system control module for a data center including activation logic for activating each of a plurality of different types of separate cooling systems within the data center in an optimal fashion based on the amount of heat being generated, wherein the plurality of separate cooling systems comprises an air-based cooling system, a liquid-based cooling system and a gas-based cooling system. It is



these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Claims 27 and 29 are allowed due to their dependency on claim 26.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### **Contact information**

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S. Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tung S. Lau/  
Tung S. Lau, AU 2863  
Primary Examiner  
January 22, 2008